UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,035	01/04/2002	Nicholas P. Wilt	MSFT-0740/177740.01	2351

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EXAMINER
DAO, THUY CHAN

ART UNIT	PAPER NUMBER
2192	

MAIL DATE	DELIVERY MODE
01/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Interview Summary	10/039,035	WILT ET AL.
	Examiner	Art Unit
	Thuy Dao	2192

All participants (applicant, applicant's representative, PTO personnel):

(1) *Mr. Swope (Reg. No. 38,041).*   (3)_____.

(2) *Thuy Dao*.   (4)_____.

Date of Interview: *10 January 2008*.

Type: a)☒ Telephonic   b)☐ Video Conference
         c)☐ Personal [copy given to: 1)☐ applicant   2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes   e)☒ No.
   If Yes, brief description: _____.

Claim(s) discussed: *1, 9 and 18*.

Identification of prior art discussed: *Devins (US Patent No. 6,615,167)*.

Agreement with respect to the claims f)☒ was reached.   g)☐ was not reached.   h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an
Attachment to a signed Office action.   _____
                                                          Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments:

Mr. Swope briefly described the distinction between the prior art and the claimed subject matter in the proposed amendments.

The examiner noted several minor informalities in the proposed amendments at least in claims 9, 10, and 25.

It was agreed that the Applicants will file the official response/amendments and the examiner will carefully consider accordingly.

TUAN DAM
SUPERVISORY PATENT EXAMINER

▲▲▲ WOODCOCK WASHBURN

INTELLECTUAL PROPERTY LAW

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FACSIMILE

DATE: **January 7, 2008**   JOB CODE:

Please deliver this and the following pages to:

Name: **Examiner Thuy Chan Dao**

Company/Firm: **United States Patent & Trademark Office**

Telecopier No.:   **(571) 273-8570**

Client/Matter No.:   **United States Patent Application No. 10/039,035**
                             Attorney Docket No.: MSFT-0740/177740.01

Sender's Name: **Masako Calico on behalf of Michael J. Swope**

Pages to Follow:

If transmission is not complete, please call our **Seattle Office at (206) 332-1380.**

COVER MESSAGE:

Thank you for your voice messge. Our suggested interview times (EST) are

Thursday, January 10, 2:00 pm or 2:30 pm
Friday, January 11, 2:00 pm

Please let us know your availability. (Masako Calico at (206) 332-1119)

Please also see the attached proposed amendment as an interview agenda.

Thank you.

WOODCOCK WASHBURN LLP *A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS*   www.woodcock.com

PAGE 1/11 * RCVD AT 1/7/2008 7:55:31 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/36 * DNIS:2738570 * CSID: * DURATION (mm-ss):03-18

| DRAFT – For Discussion Only |

DOCKET NO.: MSFT-0740/177740.01
Application No.: 10/039,035
Office Action Dated: November 6, 2007

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Nicholas P. Wilt and James S. Miller

Confirmation No.: **2351**

Application No.: **10/039,035**

Group Art Unit: **2192**

Filing Date: **January 4, 2002**

Examiner: **Thuy Chan Dao**

For: **System and Methods for Managing Drivers in a Computing System**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

REPLY PURSUANT TO 37 CFR § 1.116

In response to the Official Action dated **November 6, 2007**, reconsideration is respectfully requested in view of the amendments and/or remarks as indicated below:

☐   **Amendments to the Specification** begin on page   of this paper.

☒   **Amendments to the Claims** are reflected in the listing of the claims which begins on page 2 of this paper.

☐   **Amendments to the Drawings** begin on page   of this paper and include an attached replacement sheet.

☒   **Remarks** begin on page 6 of this paper.

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This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A computer system, comprising:

a processor;

an operating system having a selected driver that interacts with a computing component, at least a portion of said selected driver program being in an intermediate language;

a plurality of application instructions, said instructions being in an intermediate language readable by an intermediate language compiler;

a plurality of runtime instructions, said instructions being in an intermediate language readable by an intermediate language compiler, wherein said runtime instructions performs the translation between said application instructions and said selected driver; and

an intermediate language compiler capable of compiling the application instructions, and the runtime instructions and said selected driver into a combined set of instructions executable by the processor for interacting with the computing component selected driver.

2. (Cancelled)

3. (Currently amended) The computer system as recited in claim 1 [[2]] wherein the selected driver is split into user mode and kernel mode instructions.

4. (Original) The computer system as recited in claim 3 wherein the user mode instructions of the selected driver translates from device driver interface instructions to hardware-specific commands.

5. (Original) The computer system as recited in claim 4 wherein the selected driver writes hardware-specific commands into an operating system-allocated buffer for submission to a scheduler of the hardware's time.

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6. (Original) The computer system as recited in claim 1 wherein the plurality of application instructions and the plurality of runtime instructions are delivered to the computer system over a network.

7. (Currently amended) The computer system as recited in claim 1 [[2]] wherein the selected driver is delivered over a network.

8. (Previously presented) The computer system as recited in claim 1 wherein the intermediate language compiler comprises a Just-In-Time compiler.

9. (Currently amended) A method for software interaction with hardware, comprising:

~~providing~~ receiving an application program in an intermediate programming language:

receiving at least a portion of a driver program in an intermediate language, said driver interacting with a computing component on a target computer system:

~~providing~~ receiving a runtime program in an intermediate programming language, wherein said runtime ~~instructions~~ program performs the translation between said application instructions and said selected driver;

compiling the application program, ~~and~~ the runtime program and the driver program into a single executable program for execution on [[a]] the target computer system.

10. (Cancelled)

11. (Currently amended) The method as recited in claim [[10]] 9 wherein the driver program comprises a kernel mode portion ~~provided~~ in an executable form.

12. (Original) The method as recited in claim 11 wherein the driver program comprises a user mode portion provided in the intermediate language form.

13. (Original) The method as recited in claim 12 wherein the user mode portion translates from device driver interface instructions to hardware-specific commands.

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14. (Currently amended) The method as recited in claim [[10]] 9 wherein the driver writes hardware-specific commands into an operating system-allocated buffer for submission to a scheduler of the hardware's time.

15. (Original) The method as recited in claim 9 wherein the application program and the runtime program are delivered to the target computer system over a network.

16. (Currently amended) The method as recited in claim [[10]] 9 wherein the driver is delivered over a network.

17. (Previously presented) The method as recited in claim 9 wherein the step of compiling uses a Just-In-Time compiler.

18. (Currently amended) A computer-readable medium having stored thereon computer-executable instructions for software interaction with hardware, comprising:

instructions for receiving an application program in an intermediate programming language:

instruction for receiving at least a portion of a driver program in an intermediate language, said driver interacting with a computing component on a target computer system; and

instructions for receiving a runtime program in an intermediate programming language, wherein said runtime instructions program performs the translation between said application instructions and said selected driver;

instructions for compiling the application program, and the runtime program and the driver program into a single executable program for execution on [[a]] the target computer system.

19. (Cancelled)

20. (Currently amended) The computer-readable medium as recited in claim [[19]] 18 wherein the driver program comprises a kernel mode portion provided in an executable form

wherein the ~~instructions~~ the at least a portion of the driver program in an intermediate language received comprise user mode instructions.

21. (Cancelled)

22. (Original) The computer-readable medium as recited in claim [[21]] 20 wherein the user mode instructions translate from device driver interface instructions to hardware-specific commands.

23. (Original) The computer-readable medium as recited in claim 22 wherein the driver writes hardware-specific commands into an operating system-allocated buffer for submission to a scheduler of the hardware's time.

24. (Currently amended) The computer-readable medium as recited in claim 18 comprising instructions for receiving ~~wherein~~ the application program and the runtime program ~~are delivered to the target computer system~~ over a network.

25. (Currently amended) The computer-readable medium as recited in claim 19 ~~wherein~~ comprising instructions for receiving the driver program ~~is delivered~~ over a network.

26. (Previously presented) The computer-readable medium as recited in claim 18 wherein the step of compiling uses a Just-In-Time compiler.

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REMARKS

Claims 1-26 are pending in the application. Claims 1, 9 and 18 are independent.

Claims 1-26 stand rejected. Claims 2, 10, and 19 are cancelled herwith.

Claim Objections

Claims 9 and 18 stand objected to because of minor informalities. In particular, the examiner has indicated that the phrase in lines 4- 6 should read as - -...wherein said runtime [[instructions]] program performs the translation between said application [[instructions]] program and [[said]] a selected driver- - as previously recited in lines 3-4.

Applicant has corrected the claim language as suggested by the examiner..

Claim Rejections - 35 USC § 103

Claims 1, 6, 9-10, 15-16, 18-19, and 24-25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Devins (art of record, US Patent No. 6,615,167) in view of US Patent No. 6,594,761 to Chow et al. (art made of record, hereinafter "Chow").

Regarding claim 1, The examiner maintains that Devins discloses:

> a *plurality of runtime instructions, said instructions readable by a compiler* (e.g., FIG. 6, API 500, col.5: 28-44, col.6: 1-31; LLDD 202, col.3: 55-62, col.4: 22-45),
>
> *wherein said runtime instructions performs the translation between said application instructions and said selected driver* (e.g., FIG. 2A, col.3: 55 - col.4: 12; FIG. 5, col.5: 29-45; FIG. 6, 201+202+601+602 -* 500 -* 400).
>
> Devins discloses application instructions and runtime instructions as a combined set of instructions, but not explicitly disclose said instructions as intermediate language.

Action p. 3. Applicant respectfully disagrees. Claim 1 recites a plurality of runtime instructions that are combined with a set of application instructions so as to for a single set of instructions that can then be compiled on a target system. This allows the runtime instructions to be specifically tailored for a target system and designed to operate specifically

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with a particular application program. The result is an intermediate language system that executes more quickly while retaining the flexibility offered by an intermediate language.

Additionally, Applicant has amended the claim to indicate that a portion of the driver is also in an intermediate language such that the application instructions, the runtime instructions and the at least a portion of the driver instructions are compiled into a set of instructions on a target system.

For at least the foregoing reasons, claim 1 patentably defines over over Devins in view of Chow et al. Inasmuch as claims 3-8 depend from independent claim 1 and thereby incorporate its limitations, Applicants submit that they also patentably define over Devins in view of Chow. Reconsideration is respectfully requested.

Regarding independent claim 9, the examiner has provided no additional rational over the rejection of claim 1. Accordingly, Applicant submits that the above analysis applies to claim 9 as well. That is, claim 9 patentably defines over Devins in view of Chow for at least the reasons set for the above with respect to claim 1. Reconsideration of the rejection of claim 9 is requested.

Inasmuch as claims 15 and 16 depend from claim 1, they also patentably define over Devins in view of Chow for at least the same reasons.

Regarding independent claim 18, the examiner has provided no additional rational over the rejection of claim 1. Accordingly, Applicant submits that the above analysis applies to claim 18 as well. That is, claim 18 patentably defines over Devins in view of Chow for at least the reasons set for the above with respect to claim 1. Reconsideration of the rejection of claim 18 is requested.

Inasmuch as claims 24-25 depend from claim 1, they also patentably define over Devins in view of Chow for at least the same reasons.

Claims 3-5 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Devins, Chow, APA, and further in view of Schmit (art of record, US Patent No. 6,148,438).

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Applicants respectfully disagree. Inasmuch as claims 3-5 and 7 depend from claim 1, they also patenably define over the art of record at least for the reasons set forth above with respect to claim 1. Reconsideration is respectfully requested.

Claims 11-14 and 20-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Devins, Chow, and further in view of Schmit (art of record, US Patent No. 6,148,438).

Applicants respectfully disagree. Inasmuch as claims 12-14 and 20-23 depend from claims 9 and 18, respectively, they also patenably define over the art of record at least for the reasons set forth above with respect to their respective base claims.

In addition, claim 11 and 12 recite wherein the driver program comprises a kernel mode portion in an executable form and a user mode portion provided in the intermediate language form. None of the cited reference disclose a portion of a driver in executable form and a portion in intermediate language form. Reconsideration is respectfully requested.

Claims 1, 9, and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Devins in view of Sato (art of record, "Fast Compiler Re-Targeting to Different Platforms by Translating at Intermediate Code Level" to Sato, IDS document filed January 4, 2002).

Regarding claim 1, The examiner maintains that Devins discloses:

a plurality of application instructions, said instructions readable by a compiler (e.g., Test Application 201, col.5: 62 - col.6: 4; FIG. 2B-C, col.4:13-45);

a plurality of runtime instructions, said instructions readable by a compiler (e.g., FIG. 6, API 500, col.5: 28-44, col.6: 1-31; LLDD 202, col.3: 55-62, col.4: 22-45),

wherein said runtime instructions performs the translation between said application instructions and said selected driver (e.g., FIG. 2A, col.3: 55 - col.4: 12; FIG. 5, col.5: 29-45; FIG. 6, 201+202+601+602 -* 500 -» 400).

Action p. 8. Applicant respectfully disagrees. As stated above, claim 1 recites a plurality of runtime instructions that are combined with a set of application instructions so as to for a

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                                                         37 CFR § 1.116

single set of instructions that can then be compiled on a target system. This allows the runtime instructions to be specifically tailored for a target system and designed to operate specifically with a particular application program. The result is an intermediate language system that executes more quickly while retaining the flexibility offered by an intermediate language.

Additionally, Applicant has amended the claim to indicate that a portion of the driver is also in an intermediate language such that the application instructions, the runtime instructions and the at least a portion of the driver instructions are compiled into a set of instructions on a target system.

For at least the foregoing reasons, claim 1 patentably defines over Devins in view of Sato.

Regarding independent claim 9, the examiner has provided no additional rational over the rejection of claim 1. Accordingly, Applicant submits that the above analysis applies to claim 9 as well. That is, claim 9 patentably defines over Devins in view of Sato for at least the reasons set for the above with respect to claim 1. Reconsideration of the rejection of claim 9 is requested.

Regarding independent claim 18, the examiner has provided no additional rational over the rejection of claim 1. Accordingly, Applicant submits that the above analysis applies to claim 18 as well. That is, claim 18 patentably defines over Devins in view of Sato for at least the reasons set for the above with respect to claim 1. Reconsideration of the rejection of claim 18 is requested.

CONCLUSION

In the view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is in condition for allowance. Reconsideration of the application and an early Notice of Allowance are respectfully requested. In the event that the Examiner cannot allow the application for any reason, the Examiner is encouraged to contact Applicants' representative.

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